Basic Details

Publish Date

02 September 2025

Case ID#

3119

Title

Erosion during overflowing from water flowing over piles and onto embankment

Nation

England

Regulator Reference No.

309

Legal Status

Statutory

Reservoir Type

Non-impounding

Reservoir Capacity

10 - 24,999m3

Year of Construction

1950 - 1969

Main Construction Type

Earth fill embankment

Dam Height

5 - 9.99 metres

Dam Flood Category

A

Hazard Class

High-risk reservoir

Reservoir Use

- Other

Owner Type

Public body

Incident Details

Date & Time of Incident

26 June 2007 - 12:00

Date Incident Closed

Not provided

Observations that Caused the Incident to be Declared

- Dam or embankment overflowing or overtopping

Describe the Incident

In one case, a flood storage reservoir overflowed because its capacity was exceeded. In the other, a river overflowed the defences surrounding it and water flowed into the adjacent flood storage reservoir. In both cases, the embankments had been raised with steel sheet piles. When the water overflowed the sheet piles it dropped vertically onto the earth embankment below causing erosion.

Supporting Photos

No images provided.

Causes and Impacts

Natural Processes which Initiated or Contributed to the Incident

- Not provided

Main Contributing Factors to the Incident Occurring

Dam Factors

- Deterioration of materials

External Factors

- None

Shortcomings

- No apparent shortcoming

Root Cause of the Incident

Impacts on the Reservoir

- External erosion

Supporting Photos

No images provided.

Supporting Contributions and Studies

Human Factors which Influenced the Incident

Instrumentation at the Reservoir

There is no instrumentation.

Was Instrumentation Effective?

Not Applicable

Assistance by External Parties and Impacts on Downstream Population

None

Summary of Studies or Investigations Undertaken

The cause of the damage is known. It will be appropriate to carry out localised site investigations (trial pitting) to determine the length of the piles and whether or not water has passed through or beneath them. Investigations should also be carried out to determine the extent of previously reported corrosion of the piles. The remedial scheme must take into account that overtopping of sheet piles in the crest of an earth embankment causes erosion and a suitable design detail should be engineered to ensure that, when the remediation measures are completed, it does not happen again. The undertaker should look at other of their sites where there are sheet piles driven into earth embankments and satisfy themselves of their integrity against damage from overtopping.

Supporting Photos

No images provided.

Lessons Learnt

Closing Comments

Supporting Photos

No images provided.

Information provided has been sent from reservoir owners and engineers, and cleansed of personal information by the enforcement authority. We cannot guarantee the accuracy of the data, but if you find an error please contact the relevant enforcement authority.